Claims

[c1] 1.A mount for use in an optical fiber hydrophone module, the module comprising an optical hydrophone core, the hydrophone core being generally cylindrical in cross-section, having a longitudinal axis, and comprising a plurality of mandrels helically wrapped with optical fiber and connected in linear relation with interconnect springs, the mount comprising:

a cylindrical metal cage encircling the hydrophone core, circumferentially abutting the interconnect springs;

cloth tape wrapped around and affixed to the metal cage;

an open pore foam encircling and circumferentially abutting the metal cage;

means for attaching the foam to the cloth tape;

an internal strength member encircling the foam, comprising a hollow woven cylinder and at least one longitudinal positioning tape that extends inside the cylinder for the full length of the cylinder and is fastened to the cylinder at each end; and

means for fastening the positioning tapes to the foam at spaced intervals along the axis.

[c2] 2.A mount for use in an optical fiber hydrophone module as recited in claim 1, wherein the metal cage is steel.

[c3] 3.A mount for use in an optical fiber hydrophone module as recited in claim 1, wherein the cloth tape is woven polyester.

[c4] 4.A mount for use in an optical fiber hydrophone module as recited in

claim 1, wherein the open pore foam is polyurethane.

[c5] 5.A mount for use in an optical fiber hydrophone module as recited in claim 1, wherein the means for attaching the foam to the cloth tape is thermoplastic adhesive.

[c6] 6.A mount for use in an optical fiber hydrophone module as recited in claim 1, wherein the internal strength member comprises aramid fibers.

[c7] 7.A mount for use in an optical fiber hydrophone module as recited in claim 1, wherein the means for fastening the positioning tape to the foam comprises thread.

[c8] 8.A mount for use in an optical fiber hydrophone module as recited in claim 7, wherein the thread is polyester thread.

[c9] 9.A mount for use in an optical fiber hydrophone module as recited in claim 7, wherein the spaced intervals of fastening the positioning tape to the foam along the axis are approximately 18 inches.

[c10] 10.A mount for use in an optical fiber hydrophone module as recited in claim 9, wherein at each location the length of stitching along the axis is approximately from 1.2 to 1.5 inches.

[c11] 11.A mount for use in an optical fiber hydrophone module, the module comprising an optical hydrophone core, the hydrophone core being generally cylindrical in cross-section, having a longitudinal axis, and comprising a plurality of mandrels helically wrapped with optical fiber and connected in linear relation with interconnect springs, the mount

comprising:

a cylindrical steel cage encircling the hydrophone core, circumferentially abutting the interconnect springs;

woven polyester cloth tape, wrapped around and affixed to the steel cage;

a polyurethane open pore foam encircling and circumferentially abutting the steel cage;

thermoplastic adhesive for attaching the foam to the cloth tape;

an aramid fiber internal strength member encircling the foam, comprising a hollow woven cylinder and at least one longitudinal positioning tape that extends inside the cylinder for the full length of the cylinder and is fastened to the cylinder at each end; and

polyester thread for fastening the positioning tape to the foam at spaced intervals along the axis.

[c12] 12.An optical fiber hydrophone module, the module comprising:

an optical hydrophone core, the hydrophone core being generally cylindrical in cross-section, having a longitudinal axis, and comprising a plurality of mandrels helically wrapped with optical fiber and connected in linear relation with interconnect springs;

a cylindrical metal cage encircling the hydrophone core, circumferentially abutting the interconnect springs;

cloth tape, wrapped around and affixed to the metal cage;

an open pore foam encircling and circumferentially abutting the metal cage;

means for attaching the foam to the cloth tape;

an internal strength member encircling the foam, comprising a hollow

woven cylinder and at least one longitudinal positioning tape that extends inside the cylinder for the full length of the cylinder and is fastened to the cylinder at each end; and

means for fastening the positioning tape to the foam at spaced intervals along the axis.

[c13] 13.An optical fiber hydrophone module as recited in claim 12, wherein the cloth tape is woven polyester tape.

[c14] 14.An optical fiber hydrophone module as recited in claim 12, wherein the open pore foam is polyurethane.

[c15] 15.An optical fiber hydrophone module as recited in claim 12, wherein the means for attaching the foam to the cloth tape is thermoplastic adhesive.

[c16] 16.An optical fiber hydrophone module as recited in claim 12, wherein the means for fastening the positioning tape to the foam comprises thread.

[c17] 17.An optical fiber hydrophone module as recited in claim 16, wherein the thread is polyester thread.

[c18] 18.An optical fiber hydrophone module as recited in claim 16, wherein the spaced intervals of fastening the positioning tape to the foam along the axis are approximately 18 inches.

[c19] 19.An optical fiber hydrophone module as recited in claim 18, wherein at each location the length of stitching along the axis is approximately from

1.2 to 1.5 inches.

[c20] 20.An optical fiber hydrophone module, the module comprising:
an optical hydrophone core, the hydrophone core being generally cylindrical in cross-section, having a longitudinal axis, and comprising a plurality of mandrels helically wrapped with optical fiber and connected in linear relation with interconnect springs;
a cylindrical steel cage encircling the hydrophone core, circumferentially abutting the interconnect springs;
woven polyester cloth tape, wrapped around and affixed to the steel cage;
a polyurethane open pore foam encircling and circumferentially abutting the steel cage;
thermoplastic adhesive for attaching the foam to the cloth tape;
an aramid fiber internal strength member encircling the foam, comprising a hollow woven cylinder inclusive and at least one longitudinal positioning tape that extends inside the cylinder for the full length of the cylinder and is fastened to the cylinder at each end; and
polyester thread for fastening the positioning tape to the foam at spaced intervals along the axis.

[c21] 21.A mount for use in an optical fiber hydrophone module, the module comprising an optical hydrophone core, a cylindrical metal cage, an open pore foam, and an internal strength member, the hydrophone core being generally cylindrical in cross-section, having a longitudinal axis, and comprising a plurality of mandrels helically wrapped with optical fiber and connected in linear relation with interconnect springs, the cylindrical

metal cage encircling the hydrophone core, circumferentially abutting the interconnect springs, the open pore foam encircling and circumferentially abutting the metal cage, and the internal strength member encircling the foam, comprising a hollow woven cylinder and at least one longitudinal positioning tape that extends inside the cylinder for the full length of the cylinder and is fastened to the cylinder at each end, the mount comprising:

cloth tape wrapped around and affixed to the metal cage;

means for attaching the foam to the cloth tape; and

means for fastening the positioning tape to the foam at spaced intervals along the axis.

[c22] 22.A mount for use in an optical fiber hydrophone module as recited in claim 21, wherein the means for attaching the foam to the cloth tape is thermoplastic adhesive.

[c23] 23.A mount for use in an optical fiber hydrophone module as recited in claim 21, wherein the means for fastening the positioning tape to the foam comprises thread.

[c24] 24.A method of mounting an optical fiber hydrophone, the hydrophone comprising an optical hydrophone core, the hydrophone core being generally cylindrical in cross-section, having a longitudinal axis, and comprising a plurality of mandrels helically wrapped with optical fiber and connected in linear relation with interconnect springs, the mount comprising:

placing a cylindrical metal cage around the hydrophone core, the cage

circumferentially abutting the interconnect springs;

wrapping woven polyester tape around and affixing the tape to the metal cage;

placing an open pore foam around and circumferentially abutting the metal cage;

attaching the foam to the cloth tape;

placing an internal strength member around the foam, comprising a hollow woven cylinder inclusive of aramid fibers and at least one longitudinal positioning tape that extends inside the cylinder for the full length of the cylinder and is fastened to the cylinder at each end;

tensioning the positioning tape; and

fastening the positioning tape to the foam at spaced intervals along the axis.

[c25] 25.A method of mounting an optical fiber hydrophone as recited in claim 24, wherein the cloth tape is woven polyester tape.

[c26] 26.A method of mounting an optical fiber hydrophone as recited in claim 25, wherein the open pore foam is polyurethane.

[c27] 27.A method of mounting an optical fiber hydrophone as recited in claim 25, wherein the cloth tape is attached to the foam with a thermoplastic adhesive.

[c28] 28.A method of mounting an optical fiber hydrophone as recited in claim 24, wherein the positioning tape is fastened to the foam with thread.

[c29] 29.A method of mounting an optical fiber hydrophone as recited in claim

28, wherein the thread is polyester thread.

[c30] 30.A method of mounting an optical fiber hydrophone as recited in claim 28, wherein the spaced intervals of fastening the positioning tape to the foam along the axis are approximately 18 inches.

[c31] 31.A method of mounting an optical fiber hydrophone as recited in claim 28, wherein at each location the length of stitching along the axis is approximately from 1.2 to 1.5 inches.